10 December 1968

MEMORANDUM FOR: Director of Computer Services

SUBJECT : OSP Computer Requirements

1. This memorandum attempts to summarize the impact of OSP computer requirements on OCS productivity and suggests that a radical departure from the current methods of handling these requirements may be necessary.

2. OSP has been very cooperative in providing us with information on their computer requirements well ahead of actual need--to an extent greater than other customers. Their previous predictions on overall computer capacity required have been quite accurate. However, numbers of hours and mission dates don't tell the whole story; there are a number of factors involved in meeting OSP requirements:

a. Most program development and implementation by OSP has been through the use of large blocks of computer time, ranging from six to fifteen hours. Although these blocks were not during prime time, they have had an effect on Computer Center overnight productivity. The major push comes when OSP contractors are on-site for system checkout, where blocks of computer time must be made available two or three times a week to maintain contractor productivity.

b. Depending on mission orientation, operational support is sometimes necessary in blocks of 1 1/2 to 2 hours during prime shift. CTP will eventually eliminate the need for these blocks of time.

c. Data transmission and program execution every 90 minutes, lasting from two to ten minutes, is necessary for successful operation of CTP. Although the impact of these

bursts of program execution has been reduced through the use of roll-in/roll-out software, preparation for these runs is required to insure that the normal job input queue is held to a minimum and the necessary core storage is available just prior to the run. For 15 minutes or so prior to execution of CTP, the efficiency of that particular 360/65 is reduced drastically.

d. Even with a complete shift to CTP, block time will be necessary for operational support to update files once or twice per day. Again, depending on mission orientation, this block time may be required during prime shift.

e. Operation of CTP requires reliable performance from a number of pieces of hardware in series. Mean time between failure of this hardware system will probably continue to be relatively short. When a failure occurs, major disruption in 360 scheduling occurs. Diagnostic runs of up to an hour to find the source of failure are common.

f. During October OSP accounted for 1.3 shifts per day of a 360/65. In November they accounted for 2.3 shifts per day, only a fraction of which is accounted for by operational use of CTP.

3. The impact on OCS and its other customers is significant.

a. Turnaround time has degraded from two hours to four or more hours. This criterion plus our ability (or inability) to meet production deadlines is the most significant measure we have because it gives an insight into the productivity of all OCS Computer Center users, particularly our own programming people. The reasons for this degradation in turnaround time go beyond OSP load. The requirement for a new version of the operating system for OSP, the unpredictable time at which OSP runs are required, the insertion of large blocks of computer time needed by OSP--all of these have a major impact. Is this a temporary condition? Except for the disruptive effects of a new operating system, I expect that the exceptional aspects of OSP computer requirements will continue to have a degrading effect on turnaround time.

b. Computer Center scheduling has become a frustrating art in order to deal with the OSP flaps that arise and still have a minimal impact on our other customers.

c. A problem of any magnitude related to meeting OSP requirements calls into play a significant portion of OCS manpower resources, such that other nagging problems (software in particular) are pushed into the background and get solved, if at all, much too late. (Note that our overall manpower situation and competence is the best that it has ever been.)

4. These factors have not been considered carefully by us; indeed, it is difficult to do so from a long-range point-of-view. In the mode we now operate, these factors are (and must be) handled on a day-to-day, flap-by-flap basis. Continuation of this situation can only bring about poorer OCS performance and/or an unsatisfactory response to OSP requirements.

5. The basic point here is that, while several other applications are peculiar in one way or another, the OSP work is an anomoly in so many ways that one is hard-pressed to believe that it could ever operate effectively in a centralized monolithic environment. It requires real time processing; it has unusual scheduling requirements; it requires special debugging privileges; it requires expensive hardware resources; it chews up much machine time. And, although we recognize these factors, we continue to stir this job into the large pot, hoping that we can continue to absorb it effectively. Theoretically, it is possible to do so, but experience tells us otherwise. I believe the answer within the monolithic environment will continue to be just around the corner--indefinitely.

6. The political factors also continue to raise disturbing questions. Should CIA continue to absorb the costs of a major portion of a major NRO program? If so, should it continue to bury these costs in the budget of an Agency-wide support organization? Or more basically, from a systems point-of-view, why is it necessary for CIA to become part of an otherwise well integrated real-time processing network? I understand the rationale for our early involvement--that an investment had to be made to prove in-house capability. But what price must be paid for such "proof"? Now that the point has been made (to NRO or whoever) that it is possible for CIA to do the job, where do we go from here?

7. I believe some sort of dramatic proposal is necessary to bring about conscious management effort at the DD/S&T, DCI, or NRO level in order to avoid a continuation of this dilemma. The most dramatic proposal, of course, would be to take CIA out of the processing loop. A second alternative would be to fund and operate a mission-oriented, dedicated facility under OSP project management. Third could be a dedicated system operated by OCS but funded by NRO. In any event, management attention can only be brought to bear if non-OCS funds are involved. I believe at this point something of the flavor of what I suggested above must be discussed at least at the DD/S&T level--and soon.

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Deputy Director of Computer Services

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